

What is claimed is:

1. A fluid distribution system comprising:  
a hollow pipe section having at least one bore extending longitudinally therethrough;  
at least one longitudinal boss extending along the pipe section and positioned about the bore;  
an end fitting comprising:  
a hollow body configured to be received in the bore;  
a shoulder extending radially from the body and configured to abut against an end surface of the pipe section;  
at least one bolt hole extending through the shoulder and configured to align with the at least one longitudinal boss; and  
at least one fastener extended through the at least one bolt hole and secured in the at least one boss; and  
a secondary component configured for attachment to the end fitting.
2. The fluid distribution system of claim 1 wherein the body has an outer diameter substantially equal to an inside diameter of the bore.
3. The fluid distribution system of claim 2 wherein the body has an outer surface with at least one circumferential groove configured to receive a circumferential seal member.
4. The fluid distribution system of claim 1 wherein the bore has a diameter and the shoulder has an outside diameter greater than the bore diameter.
5. The fluid distribution system of claim 1 wherein the shoulder has a first planar surface configured to abut against the end surface of the pipe section and a second planar surface opposite the first planar surface and configured to abut against the secondary component.
6. The fluid distribution system of claim 5 wherein the second planar surface has a circumferential groove configured to receive a seal member for sealing against the secondary component.

7. The fluid distribution system of claim 1 wherein the secondary component includes a secondary end fitting secured to a secondary hollow pipe section having at least one secondary bore extending longitudinally therethrough and at least one secondary longitudinal boss extending along the secondary pipe section and positioned about the secondary bore, the secondary end fitting comprising:

- a secondary hollow body configured to be received in the secondary bore;
- a secondary shoulder extending radially from the secondary body and configured to abut against a secondary end surface of the secondary pipe section;
- at least one secondary bolt hole extending through the secondary shoulder and configured to align with the at least one secondary longitudinal boss;
- at least one secondary fastener extended through the at least one secondary bolt hole and secured in the at least one secondary boss; and
- means for securing the secondary shoulder to the end fitting shoulder.

8. The fluid distribution system of claim 7 wherein the means for securing the secondary shoulder to the end fitting shoulder includes at least one third bolt hole extending through the end fitting shoulder and aligned with at least one fourth bolt hole extending through the secondary end fitting shoulder and at least one third fastener secured within the at least one third and fourth bolt holes.

9. The fluid distribution system of claim 8 wherein the at least one third bolt hole is threaded.

10. The fluid distribution system of claim 8 wherein the at least one fourth bolt hole is threaded.

11. The fluid distribution system of claim 7 wherein the secondary shoulder has an end face directed toward the end fitting shoulder, the end face including a stand-off extending therefrom to maintain the secondary end fitting shoulder spaced from the end fitting at least one bolt hole and the end fitting shoulder spaced from the at least one secondary bolt hole.

12. The fluid distribution system of claim 1 wherein the secondary component includes a pipe portion with a third radial shoulder extending from the pipe section.

13. The fluid distribution system of claim 12 wherein the end fitting shoulder includes at least one third bolt hole extending through the end fitting shoulder and aligned with at least one fourth bolt hole extending through the third radial shoulder.

14. The fluid distribution system of claim 13 wherein the at least one third bolt hole is threaded.

15. The fluid distribution system of claim 13 wherein the at least one fourth bolt hole is threaded.

16. The fluid distribution system of claim 12 wherein the pipe portion includes at least two fluid paths, each fluid path terminating in a third radial shoulder.

17. The fluid distribution system of claim 12 wherein the pipe portion includes a hollow pipe bent at least 45 degrees and terminating in a third radial shoulder.

18. The fluid distribution system of claim 12 wherein the pipe portion includes a smooth hollow pipe.

19. The fluid distribution system of claim 12 wherein the pipe portion includes a threaded hollow pipe.

20. The fluid distribution system of claim 1 wherein the secondary component includes a plate configured to cover the bore.

21. The fluid distribution system of claim 20 wherein the end fitting shoulder includes at least one third bolt hole extending through the end fitting shoulder and aligned with at least one fourth bolt hole extending through the plate.

22. The fluid distribution system of claim 20 wherein the plate has at least one port therethrough.

23. The fluid distribution system of claim 22 wherein a connector is secured within the port.

24. The fluid distribution system of claim 23 wherein the connector has a valve positioned therein.

25. The fluid distribution system of claim 1 wherein at least a portion of the at least one boss adjacent the end surface is threaded.

26. The fluid distribution system of claim 1 wherein the at least one fastener is self-tapping.

27. The fluid distribution system of claim 1 wherein the hollow pipe section has an external surface and at least two opposed flanges are provided along the external surface to define a longitudinal receiving groove having a bottom surface.

28. The fluid distribution system of claim 27 wherein the bottom surface is a planar surface.

29. The fluid distribution system of claim 27 wherein each flange extends from a respective longitudinal boss.

30. The fluid distribution system of claim 27 wherein at least two longitudinal bosses are formed with an arc less than 360 degrees such that each arc terminates in a respective one of the flanges.

31. The fluid distribution system of claim 30 wherein each arc is about 260 degrees.

32. The fluid distribution system of claim 27 wherein each flange is spaced from and independent of the longitudinal bosses.

33. An outlet plate fitting configured for attaching a secondary component to a fluid pipe section, the fluid pipe section including opposed flanges that define a receiving groove having a bottom surface, the outlet plate fitting comprising:

a main body;

an engagement platform connected to and at a distance from the main body; and

a bore extending through the main body and the engagement platform;

wherein a first surface of the engagement platform facing away from the main body is a planar surface with a seal member positioned about the bore and a second surface of the engagement platform facing toward the main body has a ramped surface, such that rotation of the engagement platform in a first direction within the receiving groove causes the planar surface and seal member into sealing engagement with the bottom surface of the receiving groove.

34. The outlet plate fitting of claim 33 further comprising:

a recess in the main body that defines a stop;

a locking plate secured to the main body such that it is moveable between a position wherein the locking plate is clear of the stop and a position wherein the locking plate is aligned with the stop and wherein after the engagement platform is rotated in the first direction, the locking plate is retained in the second position such that the locking plate is secured between the stop and one of the flanges and thereby prevents rotation of the engagement platform in a second direction opposite to the first direction.

35. The outlet plate fitting of claim 34 wherein the engagement platform has at least one square corner that abuts at least one of the flanges when the engagement platform is rotated in the first direction such that the engagement platform is prevented from rotating in the first direction beyond 90 degrees.

36. The outlet plate fitting of claim 33 further comprising a set screw associated with the main body and positioned such that after the engagement platform is rotated in the first direction, the set screw is aligned with one of the flanges and wherein the set screw is advanced in to contact with the flange to prevent longitudinal movement of the outlet plate fitting.